

**Amendments to the Specification:**

***Please replace paragraph [0017] through paragraph [0022] with the following amended paragraphs:***

[0017] Figure 1 is a composite view showing the top, ~~left side, right side,~~  
and end of one embodiment of the present invention.

[0018] Figure 2 is ~~an end~~ a right side view of one embodiment of the  
present invention.

[0019] Figure 3 is a ~~fragmentary end~~ left side view of ~~the end~~ of one  
embodiment of the present invention.

[0020] Figure 4 is a ~~partial top view~~ fragmentary end view of the end of  
one embodiment of the present invention ~~showing an article as it moves on the~~  
~~invention.~~

[0021] Figure 5 is a ~~right side~~ partial section view of one embodiment of  
the invention ~~showing the arrangement of the clutch/brake assemblies.~~

[0022] Figure 6 is a ~~left side~~ partial top view of one embodiment of the  
invention showing an article as it moves on the invention ~~the arrangement of~~  
~~certain sensor assemblies.~~

***Please replace paragraph [0028] with the following amended paragraph:***

[0028] Referring now to ~~Fig. 1,~~ FIG. 1, FIG. 2, and FIG. 3, one  
embodiment of a non-contact article rotating apparatus A is shown. The non-

contact article rotating apparatus A comprises a first parallel live roller conveyor 1, a second parallel live roller conveyor 2, a first support rail 3, and a second support rail 4. Each of the first and second parallel live roller conveyors 1 and 2 are driven by one motor 5 with the motor operatively connected to the first parallel live roller conveyor 1 and the second parallel live roller conveyor 2 by two drive belts 6 (~~FIG. 2~~) (FIG. 4) - one for each of the first parallel live roller conveyor 1 (FIG. 1) and the second parallel live roller conveyor 2. It is understood that the two drive belts 6 operate at the same speed as determined by the speed of the motor 5. A series of snub rollers 7 and 11 urge the drive belts 6 against the bottom of a plurality of conveyor rollers 8 to thereby transfer an article 9 along the top surface of the plurality of conveyor rollers 8.

***Please replace paragraphs [0030], [0031], and [0032] with the following amended paragraphs:***

[0030] The first support rail 3 comprises a first series of snub rollers 7 that continuously urge one drive belt 6 into contact with the bottom of the plurality of rollers 8 in the first parallel live roller conveyor 1. The second support rail 4 includes a second set of snub rollers 11 (~~FIG. 2 and FIG. 3~~) (FIG. 4 and FIG. 5) that urge the second drive belt 6 into contact with the bottom of the plurality of conveyor rollers 8 on the second parallel live roller conveyor 2, however, the second set of snub rollers 11 are controlled by a plurality of clutch/brake assemblies 12. Each of the plurality of clutch/brake assemblies 12 comprise a

solenoid valve 13, a guided pneumatic cylinder 20, a brake pad 15, and a sensor 18 to detect the article 9. Each of the clutch/brake assemblies 12 is operatively connected to at least one of the second series of snub rollers 11 and the at least one snub roller and at least one brake pad 15 is attached to a connector assembly 16, and the connector assembly 16 is attached to a cylinder rod 17 of the guided pneumatic cylinder 20. The guided pneumatic cylinder 20 is normally extended, with the snub roller 7 pushing against the drive belt 6 to provide drive to the conveyor rollers 8.

[0031] In operation, the first parallel live roller conveyor 11 (FIG. 1, FIG. 2 and FIG. 3) and the second parallel live roller conveyor 2 are driven at the same speed, as both the first and second series of snub rollers 7 and 11 are continuously urging the two drive belts 6 against the bottom of all the rollers 8. In this mode of operation, the articles 9 are not rotated and are simply conveyed through the non-contact article rotating apparatus A in the same orientation as they entered the non-contact article rotating apparatus A.

[0032] The article 9 rotating process includes stopping the rotation of the conveyor rollers 8 of the second parallel live roller conveyor 2 by activating the solenoid valve 13 (~~FIG. 3~~) (FIG. 5) to move the cylinder rod 17 downward. As the cylinder rod 17 moves downward the connector 16 attached to the cylinder rod 17 also moves downward to pull the second series of snub rollers 11 away from the drive belt 6 while simultaneously applying the brake pad 15 to the conveyor roller 8. This operation stops the conveyor roller 8 that is under the

article 9. When the conveyor rollers 8 on the second parallel live roller conveyor 2 are stopped and the conveyor rollers 8 on first parallel live roller conveyor 1 continue to rotate, the article 9 tends to rotate about its geometrical center (as long as weight is evenly distributed across the bottom of the article.) If articles 9 enter the device on the centerline, both rotated and non-rotated articles tend to be centered upon the non-contact article rotating apparatus A upon their exit. When the article 9 has passed by the stopped conveyor rollers 8 that are associated with the clutch/brake assembly 12, the solenoid valve 13 de-energizes allowing the connector 16 to move upward thereby releasing the pressure applied by the brake pad 15 to the conveyor roller 8 while at the same time urging the snub roller 11 to again urge the drive belt 6 against the bottom of the conveyor roller 8 to restore drive rotation to the conveyor rollers 8.

***Please replace paragraphs [0035] and [0036] with the following amended paragraphs:***

[0035] In the present embodiment, PE101 and SV101 (~~FIG. 5 and FIG. 6~~) (FIG. 7 and FIG. 8) operate the first clutch/brake assembly. PE102 and SV102 operate the second clutch/brake assembly, and so on through PE112 and SV112. PXE101 and PXE102 (~~FIG. 4~~) (FIG. 6) are utilized for the optional auto-correct feature.

[0036] In an alternative embodiment of the present invention, an auto-correct option gives the non-contact article rotating apparatus A the ability to

detect whether or not an article 9 (~~FIG. 4~~) (FIG. 6) has rotated properly as it exits the device. Utilizing this feedback, the non-contact article rotating apparatus A can then automatically adjust its control outputs (rotating time) to effect the desired angle of rotation on future rotated articles 9. The auto-correct feature uses two distance detecting sensors PXE101 and PXE102. As the rotated article 9 passes PXE102, a momentary "snapshot" is taken with the distance detecting sensors PXE101 and PXE102 to determine distances "A" and "B." Because the sensors PXE101 and PXE102 are a known distance apart, and the distances "A" and "B" have been determined, the relative angle of the article 9 in relation to the travel of the article through the non-contact article rotating apparatus A can be calculated. Deviations from the desired angle can be sensed and automatically corrected on future turned articles 9. It is understood that other means may also be used to detect the orientation of the article 9 on the non-contact article rotating apparatus A. For example, in an alternate embodiment, only one detector is used to take two measurements of the location of the article 9, with the two measurements being taken at a certain short interval of time. Using the speed of the conveyor and these two measurements, the angular position of the article 9 in relation to the line of travel of the non-contact article rotating apparatus A can be calculated using trigonometric math.

***Please replace paragraph [0039] with the following amended paragraph:***

[0039] Where an embodiment of the present invention includes the auto-correct mode, the following method of achieving auto-correction is incorporated. In the auto-correct mode, the sensors for the auto-correct function are located at the discharge end of the non-contact article rotating apparatus A. As seen in FIG. 6 FIG. 8, the distance detecting sensors PXE101 and PXE102 is 7.5", the location detecting sensor PE113 is located 2.75" downstream of PXE102. When the rotated article 9 is detected by sensor PE113, the distance to the article 9 should be recorded as dimension "A" (inches) and dimension "B" (inches). When the desired angle of rotation is 90 degrees, "A" and "B" should be equal. If the article 9 is under-rotated, then "A" > "B", and if the article 9 is over-rotated "A" < "B". It is appreciated that only turned articles 9 should be measured by the auto-correct sensors. If the measured article 9 is detected as not being rotated enough, then time will be added to the rotate time. If it is determined that the article 9 is rotated too much, time will be subtracted from the rotate time. If the angle is sufficiently incorrect as to cause downstream problems; i.e., a jammed conveyor, then preventive measures can be taken such as, for example, shutting down the machine.

***Please add the following new paragraphs:***

[0022.1] Figure 7 is a right side view of one embodiment of the invention showing the arrangement of the clutch/brake assemblies.

[0022.2] Figure 8 is a left side view of one embodiment of the invention showing the arrangement of certain sensor assemblies.